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REVIEWS.

Review of Scandinavian Natural History Literature in 1867-8. By Dr. C. F. Lütken.—As an appendix to my former report I beg leave to insert a review of some Norwegian papers recently received, viz., the University programme of the University of Christiania, for 1868, by Prof. Sars, and the volume, for 1867, of the Proceedings of the Society of Science of the Norwegian Metropolis, the first named of which is of unusual scientific importance and interest.

Among the many valuable works with which Prof. Sars has enriched science, his last, "*Mémoires pour servir à la Connaissance des Crinoides vivants*," is certainly one of the most precious, and justly so from the great interest attached to this topic, partly from the great, one might say, rather painful, minuteness and care with which the author treats every detail of form and structure in the remarkable animal described. He has been successful enough to procure, through the exertions of his son, a great number (seventy-five specimens) of the remarkable small new stalked Sea-lily, discovered by the younger Sars in the abysses of Lofoten (68° north latitude), and now described under the name of *Rhizocrinus Lofotensis.* Four excellently engraved plates are devoted to the illustration of the elaborate description. The memoir is written entirely in French, and it will therefore, perhaps, be thought superfluous to give an abstract of it in this place, the more as it will be easily accessible through the liberality of the University of Christiania, to all societies, etc., which are on exchanging terms with this eminent institution. But as it may perhaps be desirable that the knowledge of the discovery of so remarkable an animal should not be withheld from the readers of this journal, I shall give some notes on it, referring for a more complete account to the excellent work of the learned author itself. This crinoid has principally been taken at depths of from one hundred to three hundred fathoms on the locality stated above, where it appears to live socially. A single dead specimen was found farther to the south, in the bay of Trondjem, at a depth of eighty fathoms. Carpenter and Wyville Thomson have also found it in other parts of the North Sea, and you know that it has been recently recognized that the "Bourgueticrinus Hotesieri," from the depths of the Gulf Stream between Florida and Cuba, is in fact a Rhizocrinus, and perhaps not specifically distinct from the Norwegian one. This will, however, if the identity should be farther proved, retain its name, as the West Indian Sea-lily was, without any sufficient reasons, referred to the quite indeterminable fossil fragments described by d'Orbigny. The greatest specimen has a length of eighty millimetres, the largest part of which belongs to the stalk, which attains a length of from twelve to seventy millimetres, and consists of from twenty-two to sixty-seven joints. These joints are distinguished by two points of structure; first, that two articulated, branched "radicles," or "cirri," branch off from the distal extremity of the third to the thirty-second lower joints, and from the very end of the lowest, attaching the stem to various marine objects, fragments of shells, polyzoa, rhizopoda, etc.; secondly, that the joints are connected by true articulations in the manner of the fossil genus Bourgueticrinus from the chalk formation, a structure hitherto unknown in any recent Sea-lily, but also found, as shown by Prof. Sars in the stalked "pentacrinoid" stage of Antedon (Alecto, Comatula). There appears, however, to be no voluntary mobility in the stalk, and the purpose of this structure is, probably, only to give it a greater passive flexibility, the lines of articulations alternating regularly at angles approaching to the right angle. The upper joints are the youngest, shorter and thinner, with the exception of the very uppermost (to which the basals are, it appears, anchylosed, or by which they are at least entirely concealed); it is large, obconical, and serves, as in Bourgueticrinus, Apiocrinus, etc., as the base of the calyx, formed by the fourth, fifth, sixth or seventh series of "Radialia," three in each. Of seventy-five specimens, four radii were found in fifteen, five in forty-three, six in fifteen, and seven in two specimens; the radii are only connected together through the soft peristome. The first "radiale" is not visible from without. The third "radiale" wears but a single arm. These arms (whose number is of course from four to seven) are unbranched and built up of twenty-eight to thirty-six joints, connected, two and two, by a double joint (zygygium), and wearing on every second joint a "pinnula" (six to seven, rarely eight, on either side, consisting of eleven to twelve, rarely fifteen joints). The mouth is central, the anal opening short, eccentric, interradial; the peristome of the disc is soft, but strengthened by small, microscopical (from four to seven) perforated plates; five of these are greater than the others, and occupy the angles of the mouth; they are the "oral plates" of the pentacrinoid Antedon, disappearing at an early period in the adult. The mouth is provided with twenty (sixteen to twenty-eight) tentacles, longer and shorter, radial and interradial, pinnate, partly studded with spiculæ, etc., analogous in all respects to those of the arms and finlets, and of the ventral furrows from the mouth to the arms; the colored "vesicles," so characteristic of Antedon, are nowhere to be found. A double series of scale-like plates closes the furrows, when the tentacles are withdrawn. There are no "pinnules ovales." In a single specimen the three lowermost "pinnulæ" showed the incipient swelling of the continuation of the peristome, indicating the beginning and development of the genital organs, and intimating the important fact, that also in this stalked Sea-lily the sexual organs had their place in the pinnula of the arms, as in Antedon. (In Pentacrinus this fact has not yet been observed.) The single unbranched shape of the arms also confirms the hypothesis of d'Orbigny that the fossil genus Bourgueticrinus had simple, undivided arms, and Rhizocrinus is on the whole the nearest recent representative of the fossil genus. Also of its evolution something is known, intimating its general accordance with that of Antedon. The second part of the memoir and its two last plates are devoted to the development of *Antedon Sarsii*, differing in several interesting particulars from that of *A. rosaceus*, as elucidated by Wyville Thomson and Carpenter. The reader who is acquainted with the extraordinary position of Prof. Sars at the University of Christiania, enabling him to devote himself almost exclusively to scientific pursuits, without being disturbed by the professional duties incumbent on most other scientific men, as curators of museums, lecturers, etc., will acknowledge the zeal and energy with which the author, though in a somewhat advanced age, continues his scientific work, as well as the enlightened liberality of the Representation, who did not hesitate to give an unusual position to a man capable of doing unusual work.

In the "Proceedings of the Academy of Christiania," for 1867, of which I was formerly only capable of giving an incomplete report, you will find some contributions to the geology of Norway (among which a paper by F. Dahl, announcing the discovery of gold and coal, probably Jurassic, in Finmarken, both however apparently not under such circumstances that the discovery can have any practical value), and a discussion about the theory proposed by Prof. Schybeler, that the short time in which the corn plants and other vegetables succeed in ripening their fruits in that northern country, is due partly to the clearness of the nights, the influence of light compensating to a certain degree for the want of heat; but a paper that has a more direct interest for North American readers, is Prof. Sars' "Determinations of a Series of Scottish and North American Glacial Shells and other remains." The Scottish collection embraced fifty species, principally from the Clyde district, of which thirty-three are also found in the glacial and fourteen in the post-glacial beds of Norway; the North American series collected by Dr. Packard, in Maine, Canada and Labrador, consisted of twenty-nine species, twenty-one of which are known from the Norwegian formations, while of the rest three or four are found in the British beds, the remaining four (*Cardita borealis*, *Pandora trilineata*,* *Thracia Conradi*, and *Aporrhais occidentalis*) are not known from this side of the Atlantic, neither in the fossil nor the recent state. — *Copenhagen.*

NATURAL HISTORY MISCELLANY.

ZOÖLOGY.

New Finner Whale. — The Academy of Natural Sciences has just obtained the perfect skeleton of a whale from the coast of Maryland. It is a finner, of the genus *Sibbaldius* Gray, and is half-grown and forty-

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* This was wrongly determined; it is the *Pandora arctica*, a circumpolar species.—A. S. P.